Identify skull bones and the major foramina

- Cranium
  - Frontal bone
  - Parietal bone
  - Temporal bone
    - Squamous
    - Petrous – encloses internal and middle ear
  - Occipital bone
  - Sphenoid
    - Body, greater and lesser wings, pterygoid processes
    - Make up base of skull in middle cranial fossa
  - Ethmoid
    - Between orbits in anterior cranial fossa
    - Cribriform plate and perpendicular plate

FORAMINA

- **Anterior cranial fossa**
  - **Cribriform plate** – **Olfactory nerves (CNI)** from receptors to bulb
- **Middle cranial fossa**
  - **Optic canal** – **Optic nerve (CNII)**
  - **Superior orbital fissure** – **Occulomotor (CNIII), Trochlear (CNIV), Trigeminal (CNV – V1 Opthalmic division), Abducens (CNVI)**
  - **Foramen rotundum** – **Trigeminal (CNV) maxillary division (V2)**
  - **Foramen ovale** – **Trigeminal (CNV) mandibular division (V3)**
  - **Lacerum**
  - **Carotid canal** – **internal carotid artery**
- **Posterior cranial fossa**
  - **Internal auditory meatus (IAM)** – **Facial (CNVII) and Vestibulocochlear nerves (CNVIII)**
  - **Jugular foramen** – **Glossopharangeal nerve (CNIX), Vagus nerve (CNX), Accessory nerve (CNXI) and start of IJV**
  - **Hypoglossal canal** – **Hypoglossal nerve (CNXII) and meningeal artery**
- **Front of skull**
  - **Supraorbital notch – nerve and vessels**
  - **Infraorbital notch – nerve and vessels**
  - **Mental foramen – nerve and vessels**
- **Base of skull**
  - **Stylomastoid foramen** – **Facial nerve (CNVII)**
  - **Incisive canal**
  - **Greater palatine canal – nerve and vessels**
  - **Lesser palatine canal – nerve and vessels**

Glossopharangeal CN IX	Both Sensory • Post 1/3 taste • Palatine • BP + blood gas Motor • Pharyngeal muscles	Motor - Medulla Sensory - Parotid (salivary gland) - Carotid sinus	Motor - Pharynx and larynx Sensory - Medulla	Jugular foramen	
Vagus CN X Divisions • Cranial • Cervical • Thoracic • Abdominal	Both Sensory (neck-trunk) • Aorta • Thoracic and abdo viscera • Epiglottis Motor (neck-trunk) • Smooth muscle • Glands • Larynx	Motor - Medulla Sensory - Cardiothoracic regions	Motor - Cardio and thoracic glands + muscle Sensory - Medulla TOTAL: 8-10 rootlets in medulla	Jugular foramen	
Spinal Accessory CN XI	Motor • Sternocleidomastoid • Trapezius	Motor nuclei of the spinal cord	Sternocleido-mastoid Trapezius	Jugular foramen	
Hypoglossal CN XII	Motor • Muscles of tongue and hyoid	Medulla	Muscles of tongue and hyoid	Hypoglossal canal	Clinically assessed with voluntary tongue protrusion

Lecture 9 – THORAX: Mediastinum and Heart

Understand the anatomy/borders of the thorax

- T5-T8 vertebrae and **sternebrae**
- Ribs 1-2
- Thoracic inlet: Rib 1, T1 and manubrium
- Thoracic outlet: Lower costal margin filled by diaphragm
- Mid-clavicular line

Describe the contents of the thorax

Superior mediastinum

- Borders = **thoracic inlet and sternal angle**
- **Includes Great Vessels**
  - Aorta
  - Brachiocephalic Aa
  - Left Subclavian Aa
  - Left Common Carotid Aa

- Superior Vena Cava

Anterior Mediastinum (smallest)

- Posterior to 4 sternebrae
- Internal Thoracic and Mammillary Aa
- **Thymus Gland**

Posterior Mediastinum

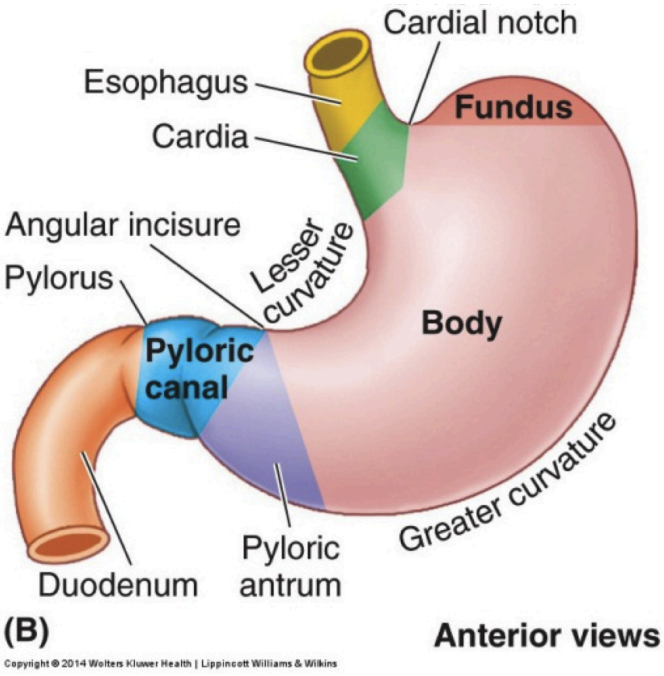
- Anterior to T5-8 vertebrae
- **Azygous/Hemizygous Vv**
  - **Thoracic wall drainage (alternate blood return from lower limbs)**
  - Azygous Vv not of a pair
  - Good for when IVC blockage occurs
- Aorta (Br.)
- Oesophagus
- **Thoracic Duct**
  - Lymph returning to the venous system has ports that drain into the thoracic duct
  - **Cisterna Chyli** is at the inferior aspect of the thoracic duct with lymph intake from the inferior abdomen
- **Sympathetic Plexus**
  - Fight or Flight responses

Middle Mediastinum – heart

- Cone shaped
- Four chambers
- Receives venous flow from R and pumps O2 blood from L
- Left diaphragm dome at L ventricle

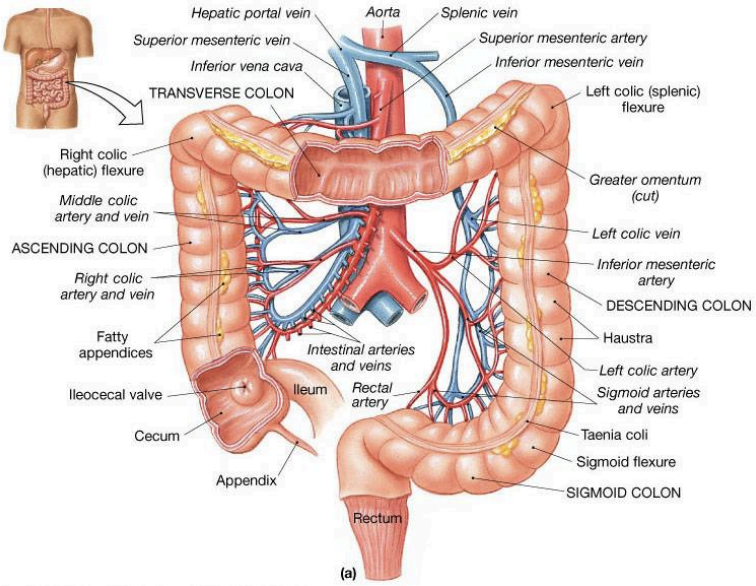
Name the parts of the stomach

- Greater and lesser curvature
- Cardia
- Fundus
- Body
- Pylorus
  - Sphincter controls discharge of stomach contents into duodenum
- Supplied by oesophagus
  - Passes through diaphragm V level 10
- **ENS – Myenteric plexus inn.**



Identify sections of the small and large intestine
Explain differences between Jejunum and Ilium
Small intestine

- **Duodenum**
  - Wraps around L2
  - Superior, descending, inferior, ascending
  - **Major duodenal papilla** opening from pancreas (major duct) and gall bladder (common bile duct)
- **Jejunum**
  - Plicae are tall and closely packed
- **Ileum**
  - Low and sparse
  - Ileocaecal junction
- **Parasympathetic** innervation dominant
- Mostly supplied by **Enteric Nervous System**
  - **Submucosal – Meissner's plexus**



Large intestine

- **Caecum**
  - Ileocaecal valve
  - 1st part of large intestine
  - **Appendix** branches off
- **Colon**
  - Ascending (R/Hepatic colic flexure), transverse, descending (L colic flexure) and sigmoid
  - **Haustra** → pouches of colon caused by Taenia Coli
  - **Taenia Coli** → muscle shorter than intestine causes pouching (Haustra)

Lecture 13 – ABDOMEN: Liver, Pancreas, Gall Bladder, Spleen and Kidney

<u>Posterior wall muscles</u> – State which muscles comprise the posterior abdo wall

- Psoas major and minor
- Iliacus
- Quadratus Lumborum

<u>Liver</u> – Describe the borders of the liver and the structures surrounding it

- Bare surface only part not covered in peritoneum
- Located in R hypochondria and Epigastric
- Left, right, caudate and quadrate lobes
- Stomach, duodenum, R colic flexure, R kidney and gall bladder all articular with the liver

<u>Liver</u> – State the ligaments that attach to the Liver

- **Falciform**
- Ligamentum Teres (round ligament)
- Coronary
- Left and right triangular

<u>Liver</u> – Explain how bile passes through the Liver

- **PORTA HEPATIS**
  - Between caudate and quadrate lobes
  - Structures going to/from liver run in Lesser Omentum
  - Enclosed in Hepatoduodenal ligament
  - **Hepatic Aa**
  - **Portal Vv**
  - **Common bile duct**
- **Lobule**
  - Functional unit of liver (**Hepatocytes**)
  - Central Vv
  - Interlobular portal triad at each corner
  - **Sinusoids**
    - Located between hepatocyte layers
  - **Bile caniculi**
    - Drain bile into bile duct

O2 rich Aa and nutrient rich Vv → enter sinusoid →filtered and detoxed by hepatocyte → caniculi drain bile from sinusoid into the bile duct for the Gall Bladder → deoxygenated blood passes into the Central Vv → Passes into interlobular and hepatic Vv → IVC → heart

Arterial supply
Abdo aorta → celiac trunk → common hepatic → proper hepatic → sinusoid

Venous drainage
Mesentery/celiac → portal → sinusoid → central → interlobular → hepatic → IVC